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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	RECEIVED
	)	
Federal-State Joint Board on	)	DEC 17 1999
Universal Service:	)	FEDERAL COMMUNICATIONS COMMISSION CC Docket No. 96-45
Promoting Deployment and	)	OFFICE OF THE SECRETARY
Subscribership in Unserved	)	RECEIVED
and Underserved Areas, Including	)	DEC 17 1999
Tribal and Insular Areas	)	FCC MAIL ROOM

Comments of the
Rural Utilities Service

The Rural Utilities Service (RUS), a rural development agency of the United States Department of Agriculture, actively supports and promotes the universal availability of a broad range of telecommunications and information services in rural America through its Telecommunications Program. The agency also administers programs to help finance the provision of electricity, drinking water, the removal and disposal of wastewater, and the provision of distance learning and telemedicine applications rural areas. It is the successor agency to the Rural Electrification Administration (REA) and has been helping rural communities finance modern telecommunications facilities and service for fifty years.

The matters contemplated in this Further Notice have been the specialty of the RUS since the inception of its Telecommunications Program. When the Telephone Amendments were added to the Rural Electrification Act in 1949, only 39% of America's farms had telephone service. Today, thanks to both universal service support and the RUS financing programs, telephone service penetration in most of the rural areas served by RUS borrowers has improved to rates comparable to those in urban areas. Unfortunately, there are still rural communities without access to modern telecommunications services. In particular, Native Americans living on tribal reservations have some of the lowest telephone penetration rates in the nation.

The RUS is proud of its contributions to improved telecommunications services in many Native American communities. In 1976, RUS financed its first tribal telephone company, the Cheyenne River Sioux Tribe Telephone Authority in Eagle Butte, South Dakota. RUS also provides financing to four tribal borrowers in Arizona[1] and a new tribal borrower in New Mexico[2]. The RUS finances 12 rural Alaskan telephone companies and cooperatives who have thousands of

[1] The Tohono O'Odham Utility Authority in Sells; the San Carlos Apache Telecommunications Utility in San Carlo; Gila River Telecommunications, Inc., in Chandler; and Fort Mojave Telecommunications in Fort Mojave.
[2] The Mescalero Apache Telecom, Inc., in Mescalero.

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Native American customers. In 1976, the RUS made its first loan to a borrower serving an insular area, the Guam Telephone Authority, and the Agency now has borrowers in Hawaii, Micronesia, Guam, the Marshall Islands, and Palau. In addition, the RUS financed major extensions in telephone service in Puerto Rico and the Virgin Islands, and those projects have grown in financial strength and have "graduated" from the RUS program. In total, 64 of the current 825 RUS-financed rural Local Exchange Carriers (LECs) serve reservation lands. The following comments are based on experience gained from this unparalleled record of accomplishment in promoting deployment and subscribership in unserved and underserved areas, including tribal and insular areas.

The RUS is committed to working with communities to find solutions to their telecommunications needs. The RUS believes that the Telecommunications Act of 1996 (Telecommunications Act or Act) gives the Federal Communications Commission (Commission) and their state counterparts the tools to create a universal service system which provides "specific, predictable and sufficient" mechanisms of support which can bring affordable telecommunications services to all Americans. The RUS has commented on many of the FCC's notices regarding universal service in the last three years including two recent filings on service to Native American communities. Copies of these two filings have been attached for the convenience of the Commission. All previous RUS comments are available at our website: **www.rurdev.usda.gov/rus**.

General Comments

This Further Notice covers two significantly different problems: Extending new service into unserved areas, and improving service penetration in underserved areas. The two problems do not share all primary causes, and separating them facilitates a more useful consideration of primary causes.

Unserved Areas

When an area is unserved, it is because no LEC has been found to serve it. This absence of a carrier is caused by at least one (and usually both) of the following circumstances:

1. The economics of serving the area do not allow the presentation of a successful business case.

High estimated plant costs and low revenue expectations usually combine to create this situation. This is a financial situation and it can be fixed by creating a precisely targeted, adequately funded, sufficient universal service support mechanism. In short, it has a regulatory solution.

2. No existing carrier is willing to enter the area and provide service and no new carrier has come forward to serve the area.

Existing carriers may wish not to expand their service areas for a variety of reasons, but the most common is that they do not believe it will be profitable. Universal service decisions already made

by the Commission make extending service by some larger existing carriers very difficult. The alternative, the creation of a new carrier, is also often elusive because a successful LEC requires financial, technical, and legal expertise that is hard to bring together in an entity formed to serve a small, unserved area. Reasonable and affordable financial incentives for serving new areas might help solve the problem of absence of carrier, but the solution to the absence of a carrier is not solely a financial one.

The RUS has helped communities solve the absence of a carrier problem in several ways. The most common solution has been to encourage a neighboring carrier with demonstrated management resources to enter the unserved area. The Pine Ridge Indian Reservation in Pine Ridge, South Dakota, is an excellent example of this solution. The Golden West Telecommunications Cooperative in Wall, South Dakota, provides the Pine Ridge Reservation with state-of-the-art local exchange service. Native Americans on the Pine Ridge Reservation (in one of the poorest counties in the U.S.) can subscribe to voice grade or advanced telecommunications services.

Another option is to help create a utility, investor owned or cooperative, tribal or otherwise. It is preferable that the utility be locally owned and operated. Locals generally bring the greatest will to serve their difficult region because they understand how their choices will affect their neighbors. The Cheyenne River Sioux Tribe Telephone Authority in Eagle Butte, South Dakota (Cheyenne River), is a good example of this solution. This company was started in 1978, and today provides state-of-the-art telecommunications to about 2,800 subscribers. It is financially strong and mature. Cheyenne River benefits from good management, planning, and construction, but it has something that many unserved areas lack - a customer base of sufficient size to provide reasonable economies of scale of operation.

Competitive Bidding

The Carrier of last resort provisions of the Telecommunications Act were designed to ensure that the vision of universal service could at last be realized by those Americans long left behind. In our earlier filings we encouraged experimentation with universal service mechanisms to find appropriate solutions for unserved areas. It may be that there are cases where no carrier will commit to serve an unserved area (or improve service in an underserved area). In such cases, a competitive bidding system for universal service support may be the most efficient way to attract a carrier to these exceptional areas. Any perceived administrative or economic efficiency should be balanced against the significant regulatory oversight necessary to ensure that the promised services are delivered.

Before turning to competitive bidding several things must be considered:

- First, the tribal or other unserved community affected by such bidding should consent to this approach.
- Second, the terms of the bid would have to grant exclusivity for a term sufficient to recover

costs of construction. Bid terms would also have to set rates and charges.

- Finally, the Commission must ensure that no carrier is willing to serve the area with advanced services capable plant under current support mechanisms. For example, in the 1990s, significant progress has been made in enhancing service to tribal communities and several new tribal utilities have successfully increased telecommunications penetration rates. It is particularly important to determine that no provider is about to take on the task. It would be a cruel irony if in the name of perceived economic efficiency, nascent local providers were denied the universal service support available under current mechanisms.

A workable system could be designed along the following lines. There would be two components to the bid. The first would consist of a universal service grant that would offset some or all of the excess construction costs required to serve the area. The bidder may determine this component is required to overcome corporate hesitancy to make an investment where the return will depend on sustained, regulatory-body-determined support. The second would consist of the operating cost support for a period determined by the bidder during which the bidder has exclusive operating rights. This period would not be allowed to exceed the useful economic life of the required infrastructure. Winning bids would be determined by present value analysis of the two component costs. The RUS wishes to emphasize that it is only suggesting a competitive bidding process for the exceptional cases. The disadvantage of such a competitive bid mechanism is that once it is in place, carriers would probably always wait to declare their willingness to serve an unserved area until the Commission conducted the bidding process for the area.

Complicating the absence of a carrier issue is the fact that perceived easy solutions to the problem may only be good solutions in the short term. The most important characteristic for a carrier selected to serve an unserved area is commitment. The carrier must be committed to serving the telecommunications needs of the entire area, using proven, modern telecommunications technology that has the same capability to evolve at comparable cost as plant used in large cities and towns.

The RUS cautions against selecting a "voice only" solution which will lock in low bandwidth service just to get some kind of service into a high cost area. A policy of technological neutrality cannot ignore the ability of a technology to evolve. The Telecommunications Act requires that advanced services be made available in all regions of the nation. A proposed "voice only" shortcut may delay the next step, a general deployment of plant to provide advanced services in the area, or make it cost prohibitive. If adding advanced services capability in a rural area requires overlaying another technology on top of that providing only voice grade access, the area is not likely to be able to support it without substantially higher levels of universal service support or higher rates.

Existing local exchange carriers are hesitant to invest in high cost, limited revenue service areas today because they are not sure how the universal service support mechanisms under consideration here will turn out. The RUS finds, in general, that rural LECs are not borrowing and investing as fast as they were before passage of the 1996 Act. In particular, they are delaying

investments in outside plant (the type of plant that bears the high cost of distance). Providing "sufficient, predictable, and sufficient" support to these areas to secure modern telecommunications, as the Act requires, is the way to close the "digital divide." The RUS has found that deployment of modern, advanced services capable plant is the more prudent option in the long run.

In summary, the challenges of deploying service in unserved areas are:

- Creating a precisely targeted, adequately funded, and sufficient universal service support system
- Finding a local exchange carrier willing to serve the area
- Serving unserved areas today with a technology that will *cost effectively* migrate to provide advanced services

Underserved Areas

According to a RUS analysis of the 1990 Census, among communities with population of 1250 or less there were 410 communities in 36 states with 1/3 or more of the households without telephone service. In communities with population greater than 1250, there were 33 communities in 14 states with 1/3 or more of the households without service. Low penetration is a serious problem in rural areas and small towns.

In an area that has an authorized incumbent LEC, poor service penetration levels can be caused by telecommunications plant of inadequate area coverage or capacity often exacerbated by pricing policies which discourage subscription, by plant of poor quality, or by customer's inability or unwillingness to pay the price for service.

1. Plant is of inadequate area coverage or capacity.

When a LEC's plant in a rural area is nearing the exhaust of its circuit capacity, the LEC may ration its limited plant capacity by using nefarious pricing mechanisms that discourage subscription. For example, subscribers seeking initial service may be required to make a one-time payment to defray part of the cost of connecting them to the exchange. These line extension charges, called "contributions in aid to construction" (aid to construction), act as a formidable barrier to many rural families seeking initial telephone service. In rural areas, aid to construction assessments are often thousands of dollars (the notice mentions several of over $100K). The RUS generally prohibits its borrowers from charging aid to construction for all proposed customers within a defined loan project, and believes this mechanism to be a principal cause for low service penetration in underserved areas. This RUS loan policy of prohibiting line extension

charges[3] in connection with RUS-financed construction is responsible for the high penetration rates among RUS borrowers, and has been exceptionally effective in achieving high service penetration rates on tribal lands, both those served by tribally-owned LECs and by other LECs.

The other widely-used pricing mechanism that some LECs use to extend the life of otherwise exhausted plant, to limit new investment, and to ration available plant capacity, is to charge distance premiums, often called "zone" or "mileage" charges. In this scheme, customers farther away from an arbitrarily selected point known as an exchange's base rate area[4] are charged more for monthly service. Zone and mileage charges affect a relatively small number of customers in an exchange, so they have a minimal affect on the average monthly cost of service and don't show up much in study area and national cost-of-service statistics. But their effect on those who pay them (and those who can't) is substantial. The zone and mileage charges paid by some rural customers can be much higher than the basic rate charged to town subscribers for the same service in the same exchange. RUS has a policy for borrowers that are not subject to state rate regulation whereby as a condition to financing they agree to adopt rate schedules without mileage or zone charges on the lowest grade of service, which is one party service in almost all cases today. Borrowers that are subject to state rate regulation are required to use their diligent best efforts to obtain approval of such rates without mileage or zone charges.

The RUS is concerned that in the future some LECs may use these pricing mechanisms to enable them to "offer service throughout the study area" as required to become an eligible telecommunications carrier (ETC) without actually having to provide service to high cost areas. The use of these pricing mechanisms to limit exposure to higher cost service would be contrary to the Telecommunications Act's premise that universal service support should be provided only to those who are actually providing universal services. These pricing mechanisms could facilitate "federally-supported cream skimming" and could place intolerable financial pressure on the carrier of last resort who could be left serving only high cost subscribers. As currently designed, the universal service support mechanism for non-rural LECs does not limit the use of these pricing mechanisms for ETCs who receive interstate universal service support

The universal service support system for both rural and non-rural LECs should be designed to discourage the use of these pricing mechanisms. The Congress spoke very clearly in the Telecommunications Act that all rates be "just, reasonable and affordable" and that rates and services be comparable between rural and an areas. These pricing schemes merit close examination by the Commission to determine whether such pricing is appropriate in light of the Telecommunications Act's clear mandate. Universal service programs should be designed to provide for service without reliance on line extension or mileage or zone charges.

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[3] For non-RUS financed construction, RUS borrowers are required to limit line extension charges to the construction cost that exceeds seven times the annual local service revenues expected from the customer. This longstanding revenue related policy was established before the introduction of the high cost fund which is intended to provide for such high cost customers. It is under review pending the implementation of the new universal service mechanism.

[4] A base rate area approximates the more densely populated town area of a rural exchange.

2. Poor Plant Quality

Poor plant quality is generally caused by LEC management decisions not to renew plant when needed. This is usually a result of spending priorities, i.e., management chooses to invest available capital resources in areas where earning potential is greatest or where there is competitive pressure to provide state-of-the-art service. In contrast, quality of service in rural areas is set at the level defined not by competitive pressures, but by the Commission in its definition of supported services. The Commission has passed on to the states the daunting job of tying receipt of universal service funding to its purpose which is to support and advance universal service in the higher-cost-to-serve areas of the nation. The RUS has recommended that support be tied to actual investment in rural infrastructure. The new universal service support system adopted by the Commission bases support on a proxy cost model, which is indifferent to investment. This mechanism does not reward new, recent, or any, rural investment. All a LEC must do to receive support is provide the supported services defined by the Commission. This does little to ensure that the quality of service offered by this supported plant is comparable to that offered in easier-to-serve low cost areas. The RUS has repeatedly argued that the link between investment and support needs to be maintained, especially for rural carriers who do not have large, lucrative urban areas to offset high cost areas.

The RUS was very concerned when the Commission reduced the quality of supported service by shrinking the definition of voice-grade bandwidth. In the Fourth Order on Reconsideration, released December 29, 1997, the Commission reduced the required bandwidth to the 1950's standard of 300-3000 Hz.[5] The RUS welcomed the announcement by the Chairman that the Commission will soon open a proceeding to reconsider bandwidth requirements for supported services.

3. A Customer's Inability or Unwillingness to Pay the Price for Service

Even among RUS-financed LECs, where aid to construction and distance-related monthly premiums are limited, there are areas where service penetration rates are low. The Further Notice mentions the Dell Telephone Cooperative (Dell), in Dell City, Texas, as having a service penetration rate of only about 82.8%, according to the 1990 Census. Dell is a good case study. According to a 1994 survey of the area prepared by Dell to support an RUS loan, the actual service penetration rate system-wide was 74%. Dell serves approximately 1000 customers in subscribers in 6 exchanges. Two exchanges, Guadalupe Peak at 56% penetration with 152 subscribers, and Mile High at 35% penetration with 72 subscribers, principally account for the low penetration rate. A major purpose of Dell's "R" loan, which was made by RUS in 1996, was

[5] See RUS comments on this in an Ex Parte filing dated January 30, 1998, and RUS's subsequent ex parte support for the higher bandwidth requirement for new investment proposed by the WUTC (attached).

to build adequate outside plant to serve additional customers in these exchanges. This new plant was based on carrier serving area (CSA) plant architecture, and Dell's engineers designed this plant for the widest practicable number of subscribers, in other words, universal services. Even so, Dell projected in 1994 that of the 120 inhabited establishments without service in Guadalupe Peak, only 29 would subscribe when the new, high-quality plant became available. Mile High was even worse. This exchange with 35% penetration was expected to add only 13 of the 136 existing unserved inhabited establishments once new universal service plant was completed. One of the principal purposes of the loan was to replace most wireless subscriber loops with CSA architecture plant using buried copper and fiber optic cables. With its longer useful service life and lower maintenance, traditional wireline plant got the nod over wireless plant from the management of this exceptionally rural LEC.

Why did so many households in these two exchanges decline to purchase high quality telephone service when it was available to them? It isn't because the cost of the service dramatically exceeded those elsewhere in Texas. Dell's local service rates are $15.40 per month. Some of the unserved households are very poor and cannot afford service, even at this price. Some of these unserved households may not want to subscribe to telephone service.

RUS has found that in many rural communities of limited means, the availability of lifeline and link up rates are not widely known. One solution would be to this problem would be a broader effort to inform the public of these universal service support programs.

It is interesting to note that Dell Telephone Cooperative receives a significant amount of high cost fund support – for 1999 that amount is reported in the Federal-State Joint Board Monitoring Report to be $1600 per loop. If this area were served by the RBOC in Texas, according to the same Monitoring Report, each loop would receive no support. The universal service support mechanism should be designed so that any carrier can afford to serve these high cost subscribers. This will require a precisely-targeted universal service mechanism so the needed support goes only to the carriers serving the actual high cost customers.

In summary, the problems to be solved to increase service penetration are:

- Enticing LECs to perform plant renewal when needed to provide adequate area coverage and circuit capacity.
- Bringing service quality in rural areas into true comparability with those services available to urban customers.
- Keeping rates for local service affordable, and consistent with rates paid for the same services in nonrural areas.
- Creating a precisely-targeted and sufficient universal service support mechanism.
- Providing adequate low income support to enable households to subscribe to reasonably-priced local service.

Recommendations

The keys to improving deployment of service in unserved areas and improving subscribership rates in underserved areas restated briefly are:

1. Creating a precisely targeted and sufficient universal service fund
2. Finding a LEC to serve an unserved area
3. Enticing LECs to renew plant when needed
4. Making rural service truly comparable to urban service
5. Ensuring that rural LECs use technology that can cost-effectively add advanced services
6. Keeping rural service rates affordable
7. Providing special assistance to extremely low-income households to make local service available to all

The Commission has the tools necessary to solve these problems. The RUS respectfully makes the following recommendations:

1. The new universal service funding mechanism should target support to all high cost customers and only high cost customers. Study area averaging prevents such targeting and may cause the fund to be larger than necessary. Universal service support portability, which the Commission maintains is needed for competitive neutrality of the mechanism, could be destructive to universal service unless only the high cost customers generate support for a carrier.

The Commission has a cost model (Hybrid Cost Proxy Model, HCPM) that calculates forward looking economic costs on a per cluster basis, before combining those costs into study area averages. The Commission could target support to high cost customers by assigning payments only to customers within high cost cluster areas.

2. New ideas should be explored for finding LECs to serve unserved areas. For example, a new study area should be created for each unserved area. Rural and non-rural LECs should be able to earn support when providing modern service to this study area. This would have the effect of targeting and enhancing support for the unserved areas of the nation.

A characteristic of the current universal service support mechanism is the delay in paying support. This discourages the formation of new entities to serve unserved areas. The early months are critical for any new telecommunications entity. Current universal service rules create a significant lag between the initiation of service and the flow of support payments. The Commission should establish procedures that would allow support funds to flow to service providers much more quickly. Initial support could be determined by RUS cost studies and subscriber projections, and by pro-forma studies for non-RUS borrower.

Many tribal lands and states do not recognize state regulatory authority on tribal lands within the states, so the Commission may have sole authority to regulate telecommunications services in

these areas. The Commission should use its authority swiftly in finding a qualified carrier to provide service.

The FCC should permit "in kind" contributions to universal service under certain circumstances. Carriers should be given the opportunity to provide modern services in designated unserved and underserved areas in lieu of cash contributions to the Universal Service Administrative Company. In kind contributions could also be considered for temporary service provided by non-eligible carriers up to the amount by which they reduce their rates so that they can provide their service at rates that are reasonably comparable to urban rates. This might provide some communities with a "bridge" that could serve until advanced services capable plant is built. This could be attractive to non-advanced services capable wireless providers.

3. Ways must be found to entice LECs to renew plant when needed. The key to enticing LECs to renew plant is to make it pay. The universal service support mechanism recently adopted for non-rural LECs bases payment of support on a forward-looking economic cost of providing the cost, as computed by the HPCM. This implementation will not encourage investment in rural, high cost areas. In fact, it will reward those carriers who decline to invest. A link must be established between investment and payment of support, so that LECs who invest in rural plant receive more support than LECs who don't invest. In short, it may not currently pay to invest in a rural area if you are a non-rural LEC. The RUS is concerned that if an inappropriately applied forward-looking model-driven cost method of determining support is selected for rural LECs at some point in the future, it may not pay for them to invest in rural plant either.

The Commission Must Solve the "Parentage" Problem

The Commission should welcome acquisitions of rural exchanges, not discourage them as is now the policy. Sales and acquisitions of exchanges are a natural result of deregulation. As LECs work to position themselves in the competitive marketplace, they may find parts of their businesses that they do not wish to continue. If non-rural LECs do not wish to invest their capital in rural areas, they will not invest. But when an exchange is acquired by a rural LEC from a non-rural LEC, the May 8, 1997, First Order on Universal Service, tied an acquiring company's universal service support to the per-line support of the selling LEC. This "parentage" of the exchange is an impediment to investment, and even its acquisition.

The RUS understands the reasons that the Commission believes required the setting of an interim cap on the high cost fund. Without endorsing the appropriateness of a cap or its current level, we believe it should be adjusted when granting study area waivers which allow either an existing or new LEC to qualify for universal service support as a rural carrier. The Commission's three-pronged test for approving such waivers carries the presumption that such adjustments will be made. The first prong requires that the waiver for any single carrier shall not increase total universal service support, presumably high cost support, by more than one percent. But the cap prevents any increase. At a minimum, the cap should be reset by the amount approved in each

study area waiver. If Commission believes in letting market forces work, then removing significant regulatory impediments to the sale of rural high cost exchanges is one action that would help improve subscribership and service quality in rural areas.

Mechanisms used by LECs to ration available plant capacity are counterproductive in a universal service effort and should be avoided. These mechanisms are only needed if universal service support is insufficient. The Commission should examine these mechanisms and determine whether aid to construction and zone and mileage charges, particularly when imposed on low-income rural residents, violate the principles of the Telecommunications Act. And finally, Eligible Telecommunications Carrier status should not be granted to carriers who impose anything but nominal aid to construction charges and zone and mileage charges in areas qualifying for universal service support. However, this last step is not a remedy to this problem. The difference in cost of serving low cost town customers and high cost rural customers is so great that some LECs will target the low cost customers in rural towns even without the benefit of receiving universal service support. Precise targeting of universal service support is needed to alleviate this problem, so that a carrier of last resort left serving only high cost customers would receive adequate universal service support to continue doing so.

In those circumstances where state authorities lack jurisdiction over tribal territory, the Commission should use its authority to monitor and order service improvements on tribal lands.

4. We must make sure that services offered in rural areas are truly comparable to those offered in urban areas. Tribal lands are in special need not only of voice communications, but also of access to the rural economic development opportunities that e-commerce is bringing to other areas of the nation. E-commerce today depends on modern modem access over voice grade circuits. E-commerce in the near future will depend on the higher speed access that advanced services will offer. The Commission should avoid "quick fixes" through the creation of artificial incentives for low bandwidth voice-only services. To the greatest extent possible, supported services should be capable of providing access to advanced services. A "voice-only" solution will isolate consumers already left behind too long from the e-commerce-driven information age economy and create a sub-tier of universal service for tribal communities not contemplated by the Telecommunications Act.

The Commission's announced reconsideration of supported bandwidth is encouraging. The RUS has objected to the reduction in bandwidth from the First Order on Universal Service, May 8, 1997. The new requirement of 300-3000 Hz is not the bandwidth available to urban customers on their short loops. The RUS knows there is no technical reason for short loop bandwidth to be limited to 2700 Hz, but there apparently is no publicly available data to confirm this. Bandwidth comparability is so important to rural subscribers who need to use modems for access to the internet that the Commission should take steps to have urban bandwidth independently measured.

Nowhere is the danger of lowering the bandwidth bar more evident than in unserved areas. After waiting for years for a law which promises them the opportunity to join the information age, the

unserved could find that the lowered bandwidth standards thwart that promise by encouraging the construction of long term barriers to the technologies of the next century.

5. The Commission should ensure that rural LECs use technology that can cost-effectively add advanced services. The Commission has announced an inquiry into advanced services to be conducted next year. Rural America should not have to wait for yet to be launched satellites, experimental aircraft, and other speculative technologies to provide them with advanced services, and the Telecommunications Act does not contemplate that they will have to.

6. The universal service support mechanism should enable rural and non-rural LECs to keep rural rates affordable. To keep rural penetration rates from falling, the precisely-targeted and sufficient universal service support mechanism must get the support to carriers who serve the high cost customers. Study area averaging which undermines this precise targeting, and support portability, as currently contemplated, may leave some incumbent LECs serving only the highest cost customers in their service areas. Those LECs will either have to charge unaffordable rates to their rural customers or will go out of business.

7. Special assistance should be provided to enable extremely low-income households to subscribe to local service. Even "affordable" service is not affordable to extremely low-income families, and in rural areas, telephone service are often one's only connection with emergency services. The RUS applauds recent efforts to address lifeline support inequities on tribal lands. Given the special federal relationship with Native Americans as well as the FCC's general responsibilities under section 254, the Commission should consider whether an enhanced lifeline program would be appropriate for tribal areas, insular areas, Alaskan villages, Hawaiian homelands, and other impoverished areas to ensure the "affordability" of modern telecommunications services.

The current Lifeline Program's maximum payment covers less than half of today's average cost of monthly service, and this may not be enough for some families. More emphasis should also be placed on options that allow customers to keep local service despite nonpayment of long distance charges. One additional idea would be to require a LEC to offer disconnected customers a service package consisting only of 911 and other emergency calling capabilities.

INSULAR AREAS

The RUS is encouraged that the FCC is focusing special attention on universal service support for insular areas. The Commission must be certain that its definition of insular areas does not leave Hawaii or states with island populations like Alaska and Maine with universal service rules which do not meet their unique circumstances. The RUS has observed, for example, that the Rural Health Care discount program as originally designed had rules which unintentionally made it difficult for applicants in Alaska and Hawaii to qualify for much needed support. The RUS

believes that the insular language in the Act gives the Commission flexibility to meet special telecommunications needs of island residents in states, territories, and jurisdictions with a special relationship with the United States.

The RUS is a significant lender to island nations in the Western Pacific.[6] These nations have a special relationship with the United States based on history and compacts of free association. Recent and proposed changes in international settlement rates make the Commission's examination of the application of the '96 Act's insular provisions most timely. The RUS welcomes an opportunity to discuss the unique challenges of providing telecommunications services in insular areas.

RURAL HEALTH CARE

The availability of the E-rate for schools, libraries and rural health care facilities including the availability of the RUS Distance Learning and Telemedicine program holds great promise in closing the digital divide in tribal and remote communities. The RUS has filed comments on the Rural Health Care (RHC) discount program[7] and is pleased that the Commission has expanded the RHC discounts to long distance charges. To summarize RUS' earlier comments, RHC discounts should apply to all telecommunications services, the definition of rural health care providers and clinics should be expanded to make more facilities eligible for much needed RHC discounts, distance related charges should be covered, community use should be encouraged and the maximum allowable discount rules should be abandoned. A much more simple calculation of urban/rural differential should also be developed.

CONCLUSION

The RUS tribal borrowers and borrowers serving Native American communities prove that Native Americans do not have to choose between no service and poor service. The RUS is dedicated to finding solutions for communities without service and those suffering from poor service. RUS financing, engineering expertise and quality assurance can only bring service to an eligible community if federal and state universal service policies create the sustainable economics for investment.

The problems on tribal lands, insular and remote areas are a magnification of the problems faced throughout rural America. Fortunately, the Telecommunications Act gave the Commission new and clarified authority to make it possible for the promise of universal service to be fully realized. A universal service support system which is focused on investment, a lifeline support system

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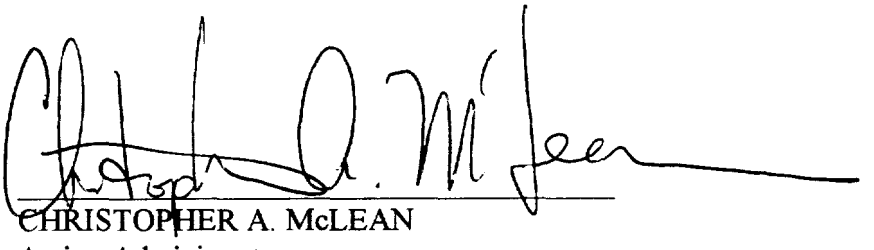
6 Micronesia, Guam, Marshall Islands, Northern Mariana Islands, and Palau.

7 See RUS comments on this in a filing dated April 5, 1999, attached.

which makes service affordable for tribal and impoverished communities, and a commitment to making certain that advanced services become available, will help Native Americans and all rural Americans economically and educationally, and will improve their quality of life.

The RUS appreciates the opportunity to comment on this proceeding and welcomes the opportunity to work directly with the Commission to find innovative solutions for unserved and underserved communities. Applied properly, new telecommunications technologies offer these communities an unprecedented opportunity to succeed in the information economy.

Dated: December 17, 1999



CHRISTOPHER A. McLEAN
Acting Administrator
Rural Utilities Service

Attachments

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of Universal Service Administrative Company
Report to FCC, Evaluation of the Rural Health Care Program

DA 99-521
CC Docket No. 96-45 and
CC Docket No. 97-21

Reply Comments of the
Rural Utilities Service

The Rural Utilities Service (RUS, the Agency), a rural development agency of the United States Department of Agriculture, actively supports and promotes the universal availability of a broad range of telecommunications and information services in rural America. The RUS and its predecessor agency, the Rural Electrification Administration, have made significant investments in rural telecommunications services throughout the nation.

The RUS is pleased to comment on the March 5, 1999 Universal Service Administrative Company (USAC) Report to the Federal Communications Commission (FCC) and offer recommendations to improve the administration and value of the Rural Health Care component of the E-rate discount program.

The E-RATE & DLT

The RUS has been a strong proponent of the E-rate program. By providing discounted services to schools, libraries and rural health care providers, the E-rate ensures that rural America is part of the information age. Rural America has benefited substantially from the schools and libraries component of the E-rate. If properly implemented, rural health care (RHC) discounts will also provide significant benefits to rural communities.

The RUS has had a preview of the great advantages of bringing telecommunications, education and health care together. The Federal partnership with rural America has been long-standing. Initiatives such as the RUS Distance Learning and Telemedicine Loan and Grant Program (DLT) strengthen that partnership.

This program enhances the quality of life in rural communities by providing life saving and educational opportunities once available and affordable only in our nation's cities. Since 1993, the RUS has made approximately $63 million in grants and $5 million in loans as part of the DLT program. The funding is helping over 1,000 schools and learning centers to provide increased educational opportunities to rural students and residents and, enhances health care at over 725 hospitals and rural health clinics. During the 1999 Fiscal Year, the RUS will make $12.5 million available for DLT grants and $150 million available for DLT loans.

One lesson RUS has learned is that high monthly costs are a significant impediment to sustainable distance learning and telemedicine projects. The Telecommunications Act of

1996 recognized the need to provide discounts for telecommunications services to schools, libraries, and rural health care providers (the E-rate). E-rate discounts will reduce the cost of internal connections and the recurring monthly charges for telecommunications services and help solve that problem. Those discounts provide part of the equation. The other part is provided by the DLT program, which focuses on end-user equipment. Together they provide powerful assistance in making modern telecommunications technology, enhanced learning opportunities, and health care services affordable and available to rural citizens. The E-rate and DLT programs also improve rural economic development in rural areas through access to the information superhighway.

The RUS has just published a direct final rule in the March 25, 1999, Federal Register to streamline the DLT program. These amendments to the current DLT regulation clarify the requirements for the different types of financial assistance offered; streamline policies and procedures for obtaining loans and expanding the purposes for which loan funds can be used; and award grants on a competitive basis. It is anticipated that information regarding loan and grant application requests and a funds availability announcement will be available by May 1999.

It is through our experience with assisting over 725 hospitals and rural clinics through telemedicine projects that the following suggestions to improve the utilization and administration of RHC portion of the E-rate program are offered to the FCC and the USAC.

ADMINISTRATIVE EFFICIENCIES

The ratio of administrative costs to program costs is related in significant part to the current design of the RHC discount program that limits the number of program participants and eligible services.

The USAC and the FCC, however, should act expeditiously to implement administrative efficiencies envisioned by merging the Rural Health Care Corporation, Schools and Libraries Corporation and the Universal Service Administrative Company. Merging RHC discount operations with other USAC entities performing similar functions should reduce overhead costs.

It is also imperative that every effort be made to simplify the RHC discount application and discount calculation process. The application process is simply too complex. Rural Health Care providers are not telecommunications experts and have very limited staff to comply with the multi-step application process. While health care providers are the beneficiaries of the RHC discounts, it is telecommunications carriers that receive the financial benefit of RHC discount offsets and reimbursements, as well as the benefits of increased demand and plant utilization. State and federal agencies regulate these entities and virtually all are participants in other universal service programs administered by NECA and USAC. Combined with the telecommunications carriers' obligations to abide by FCC, NECA and USAC rules, a simplified application process can adequately protect against waste, fraud and abuse.

The RUS is convinced that if the application and discount calculation processes are simplified and the participation and service eligibility rules made consistent plain meaning of Section 254 of the Telecommunications Act of 1996 (the 1996 Act), demand for RHC

discounts will increase. With this increase in demand, and necessary administrative savings and consolidations, costs relative to program levels will be more reasonable.

ETC LIMITATION

The RHC discount program should not be limited to services offered by telecommunications carriers that are designated as Eligible Telecommunications Carriers (ETCs). This limitation inhibits the usefulness of the current program. Section 254 (h) is very clear that all telecommunications carriers must provide RHC discounts and that all telecommunications carriers are entitled to have those discounts offset their universal service obligations.

Section 254 (h) of the 1996 act provides that, "(a) telecommunications carrier shall...provide telecommunications services which are necessary for the provision of health care services...including instruction related to such services...to any public or nonprofit health care provider that serves persons who reside in rural areas...at rates that are reasonably comparable to rates charged for similar services in urban areas...."

The provision further provides that "A telecommunications carrier providing service under this paragraph shall be entitled to have..." the rate differential treated as part of its universal service obligation.

Nothing in the plain language of Section 254 (h)(1)(A) limits availability of RHC discounts to ETCs. It has been argued that unlike Section 254 (h)(B)(ii) which provides for reimbursements to carriers for discounts offered to schools and libraries, 254(h)(1)(A) does not contain a "notwithstanding...subsection (e)" proviso thereby requiring RHC participation be limited to ETCs. This reading misunderstands the structure of Section 254 (h) and ignores the absence of the "subsection (e)" proviso in 254(h)(B)(i) that is the parallel offset provision to the second sentence of the 254(h)(1)(A).

E-rate discounts provide for reimbursements under subsection 254(h)(B)(i) and under the general universal service principles. The "subsection (e)" proviso was necessary to permit non-ETCs to receive E-rate discount reimbursements. However, under 254(b)(4) and 254(d) all carriers must contribute to mechanisms established to preserve and advance universal service. Section 254(h)(B)(i) and the second sentence of 254(h)(1)(A) do not contain the subsection proviso, because both go to the universal service obligations of telecommunications carriers and providers. Therefore, no "subsection (e)" proviso is needed. Furthermore, to have the obligation, without the opportunity to offset that specific universal service contribution would violate the 254(d) mandate for contributions which are equitable and nondiscriminatory.

As a matter of law, participation in the RHC discount program should not be limited to telecommunications services provided by ETCs. It is also important to extend coverage as a matter of policy. Long distance and toll charges are among the increased costs of rural telemedicine compared to urban telemedicine. The medical expertise available in most urban centers is more than just a local call away from rural areas and long distance service should be included as a supported service.

ALL TELECOMMUNICATIONS SERVICES SHOULD BE COVERED

As discussed above, the plain language of Section 254 (h) applies to all services which are necessary for the provision of rural health care services and instruction. Current rules significantly limit the value of RHC discounts to telemedicine practitioners. These restrictions also stand as a barrier to infrastructure investments in telemedicine projects and are also contrary to the letter and spirit of Section 706 of the 1996 Act.

Since we would expect the medical care community to be in the forefront of users of advanced telecommunications service, we believe the current supported bandwidth of 1.54Mbps may be inadequate. With the rapid evolution of high-speed broadband networks, such as urban residential service approaching the 1.54 Mbps capability, the medical community needs are expected soon to significantly exceed this level.

RHC discounts should be expanded, but the FCC and USAC should make clear that only telecommunications services are covered by RHC discounts. Consistent with the RUS exparte comment filed on June 10,1998, (CC Docket 96-45) on improvements in the schools and libraries portion of the E-rate program, there should be no confusion that paint, carpeting, structural and other non-telecommunications service costs are not eligible for RHC discounts. Other federal programs such as the RUS DLT program are available to assist with the financing of end user hardware and facilities used in telemedicine projects.

MAXIMUM ALLOWABLE DISTANCE RULES

The current length limitations to eligible services should be abandoned. These limitations have unfairly limited the utility of RHC discounts to many rural communities and imposes an extreme hardship on any rural provider where the Maximum Allowable Distance rules preclude connection to the needed bona fide urban medical center. Maximum Allowable Distance artificially limits the choice to the nearest town with a population of 50,000 which may not have the medical capabilities needed by the rural health care provider. This limitation manifests particularly unfair treatment on telemedicine projects in the State of Hawaii where distance and insularity impose high costs above and beyond distance. Valuable medical networks could be created among and between rural hospitals, clinics and instructional institutions regardless of their proximity to a town of 50,000. The test should be the reasonableness of the network created.

Additionally, long distance telecommunication services are completely excluded from program support. Geographic isolation especially in the State of Alaska translates into higher costs for telecommunications service providers by not allowing any recovery of these excess costs.

Distance related charges, whether they consist of facilities charges or long distance charges, or whether they are provided by ETCs or non-ETCs, ultimately result in excess rural telecommunications costs. And the discount formula of support as a percentage of cost, if such costs were exorbitant, would not meet the needs of rural health care providers. These service costs must be brought down to a level as if it were provided in an urban area. RUS recommends that rural service charges are benchmarked to the charges in the largest city in a state and the discount would be the difference between the total rural cost for a requested service and the equivalent urban cost.

THE DEFINITIONS OF RURAL HEALTH PROVIDERS SHOULD BE EXPANDED

The current limited definitions of eligible recipients of RHC discounts preclude legitimate rural health care providers from qualifying for RHC discounts and should be expanded. The 1996 Act does not define the term "rural health clinic." The Webster's dictionary defined a clinic as "an institution or station often connected with a hospital or medical school for the examination and treatment of out patients." Giving a plain reading to this term would include facilities providing medical services at extended care facilities, nursing homes, educational institutions and skilled care facilities. The essential element of the definition of clinic should be "examination and treatment."

The definition of consortium should also be modified to comply with the 1996 Act. Under Section 254 (14)(B)(vii) consortia of health care providers must include only one of the entities described in clauses (i) through (vi).

Under the plain reading of the statute, an eligible health care provider consortium can include for-profit entities, as long as the consortium itself is non-profit and providing service to rural residents.

The FCC and USAC should also emphasize that RHC telecommunications discounts are available for instruction related to rural health care services. There is a significant need in rural areas for health care, emergency medical, pharmacy and public safety professionals to have access to continuing education courses, instruction on new technologies and treatments as well as basic instruction necessary to join the various medical fields. By making medical instruction available in rural areas, local residents can develop the skills necessary to address the needs of rural medically under-served areas.

COMMUNITY USE IS NOT RESALE

Community use of distance learning and telemedicine facilities should be encouraged, so long as community users are not charged for the use of discounted telecommunications services. Instruction is a key purpose of the RHC discount provisions of the 1996 Act. The RUS has found that distance learning and telemedicine facilities become an important community asset, allowing for continuing education opportunities for scout troops, emergency medical professionals, and community service organizations. The introduction of telecommunications technologies to new audiences also builds demand for new services at home and the addition of advanced infrastructure to service distance learning and telemedicine users supports the national goal of broadband deployment and creates new opportunities for economic development. These community benefits and demand enhancing results are part of the universal service vision of the 1996 Act.

COORDINATED OUTREACH

The RUS is an enthusiastic supporter of school, library and rural health care discounts under the 1996 Act. We have included references to the availability of these discounts in material and presentations on our DLT and basic infrastructure programs. We participate in several groups dedicated to expanding educational and health care opportunities in rural areas. We welcome the opportunity to participate in more outreach efforts. It would be beneficial for the FCC, USAC and other federal agencies to coordinate outreach. There is very little overlap in federal programs directed toward distance learning and telemedicine, but together

they weave a fabric of coherent policy to utilize information age technologies to improve the quality of life for all Americans.

RELEASE OF FUNDS

The RUS supports significant reforms in the RHC discount program. It may be necessary to delay slightly the opening of new eligibility for discounts until the FCC can act on the rule changes necessary to successfully implement this important program. That regulatory reform effort should be expedited and should in no way delay the obligation and release of funds to those who have applied under the current rules. It is critically important that those who applied in good faith for RHC discounts should see the benefits of the program as soon as possible. This will help build confidence in the program and encourage telecommunications carriers to vigorously serve the rural health care market. If the second round of applications are to be delayed, the existing applicants should have their eligibility and discounts extended until the full implementation of the next round, so that there is a seamless transition from one regulatory regime to the next.

CONCLUSION

The RUS has seen how the application of telecommunications technologies to health care and education can change and save lives. The FCC has an important responsibility to ensure that the universal service vision of the 1996 Act is fulfilled. The reforms of the RHC discount program can help make that vision a reality. The RUS appreciates the opportunity to comment on this important matter and will work with the FCC, USAC and our fellow federal agencies to make certain that this program is a success.

Dated: April 5, 1999

CHRISTOPHER A. McLEAN
Deputy Administrator
Rural Utilities Service

RUS is Committed to Improving Native American's Quality of Life

Statement before the Federal Communications Commission

by
Christopher A. McLean
Deputy Administrator
The Rural Utilities Service
United States Department of Agriculture

March 24, 1999
Gila River Indian Reservation - Gila River, Arizona

Mr. Chairman and members of the Commission, my name is Christopher A. McLean, I am the Deputy Administrator of the Rural Utilities Service. Thank you for inviting me to testify today.

The Rural Utilities Service (RUS) is a Rural Development Agency of the United States Department of Agriculture. We administer programs to help finance Water, Waste Water, Electric, Telecommunications, Distance Learning and Telemedicine projects in rural areas. We hold a $42 billion loan portfolio of investments in rural infrastructure.

This year, our Telecommunications program is celebrating its 50th year making rural America part of the information age. In 1949, when President Truman signed the Rural Telephone Act into law, 39% of American farmers had telephone service. Today, Rural communities have some of the highest telephone penetration rates in America.

However, this generally positive picture of telecommunications service in rural areas is clouded by persistently low telephone penetration rates among the rural poor and in native American communities.

The RUS and its predecessor agency, the Rural Electrification Administration, have been dedicated to improving the quality of life in rural America for over 63 years. In tribal communities, which are generally rural, the RUS has had a long record of success in helping Native Americans bring quality water, electric and telecommunications services to their homes and businesses.

We have worked with companies and coops serving Native Americans since the earliest days of our telephone, electric and water programs. We also have longstanding relationships with tribal entities providing utility services. The Navajo nation, for example, has been an RUS electric borrower since 1961 and the Cheyenne River Sioux Tribe has been an RUS borrower since the 1970s.

Improving the quality of life for Native Americans is a priority for President Clinton, Vice President Gore, Secretary Glickman, and the RUS. As an example of that commitment, RUS has focused outreach efforts on tribal communities which has resulted, in the tripling of RUS investment in Native American water and waste water projects since President Clinton took office.

In telecommunications, RUS is making significant investments in tribal communities. In recent years there has been growing interest among Native American communities in RUS

programs.

Providing modern affordable telecommunications services to all American is the central focus of the Telecommunications Act of 1996. Low levels of service to Native Americans can not persist if we are to fulfill the vison of that landmark legislation. While my remarks will focus on key issues involved in establishing and operating a successful tribally-owned telecommunications company, I do not want to under emphasize the work of the 60 RUS non-trible borrowers who serve Native American communities. They too are heros in the RUS success story.

The Commission should also recognize the problems with Native American service are magnifications of problems with high-cost rural service throughout the Nation. These problems can not be solved without a predictable and sufficient universal service support system.

The RUS has made loans to five tribal entities: Tohono O'odham Utility Authority in Sells, Arizona; Gila River Telecommunications, Inc., in Chandler, Arizona; San Carlos Apache Telecommunications Utility, Inc. in San Carlos, Arizona; Fort Mojave Telecommunications, Inc., in Fort Mohave, Arizona; and, Cheyenne River Sioux Tribe Telephone Authority in Eagle Butte, South Dakota. These five entities currently serve 8,000 Native American subscribers. Additionally, another 60 RUS borrowers serve portions of reservations, providing service to approximately 27,000 Native Americans. This fiscal year, RUS anticipates loan applications from two tribal entities new to the RUS program - the Mescalero Tribal Authority in New Mexico and the Turtle Mountain Tribal Authority in North Dakota. We have also had detailed discussions with other tribal entities in California, Arizona, New Mexico, Colorado, and North Dakota concerning RUS financing for tribal telecommunications.

Additionally, the RUS Distance Learning and Telemedicine Loan and Grant Program has provided financial assistance totaling $5.8 million in grants and $247,000 loans for improved educational and medical services on reservations.

To ensure that the benefits of the RUS Telecommunications Program are made available to the largest number of Native Americans possible, we have made numerous presentations at American Indian workshops, seminars and conventions to discuss how tribal entities may participate in RUS programs. Our general field representatives visit with tribal authorities who are interested in improved telecommunications service and discuss ways to improve their service. Unfortunately, most reservations are served by telephone companies that do not borrow from RUS; therefore, significant new RUS financial involvement will likely come in the form of loans to newly-formed tribal telecommunications companies.

I am also pleased to announce today that the RUS has just agreed to participate in a summer intern program with students from Native American Tribal Colleges.

We are particularly proud that RUS involvement with tribal borrowers has resulted in substantial improvements in telecommunications-related services on reservations. At the 5 tribal entities detailed above, initial penetration rates for telephone service before RUS involvement averaged 28 percent. Those rates have risen to 78 percent today and we anticipate even higher penetration rates as several borrowers are still constructing facilities.

One fact is critically important -- forming a new telecommunications company in today's economy is a formidable task. Not only are there substantial financial hurdles to conquer, the industry, as a whole, is radically changing due to passage of the Telecommunications Act of 1996. Telecommunications companies today must be aware of current regulations addressing toll separations, access charges, plant accounting, plant unbundling, and universal service fund issues as well as the potential impact of deregulation on each of these issues and the possibility of competitive entry once significant funds have been invested. If a newly-formed company does not have this expertise readily available, it may have to rely on consultants to assist it in these areas. To be successful in any telecommunications enterprise, management must have the necessary financial and technical resources available, either through its own staff or through hired consultants.

RUS provides advice and assistance in formulating plans for designing and constructing telecommunications plant and the financial requirements for obtaining a loan from RUS. We do not, however, assist potential borrowers in the actual formation of telecommunications companies. There are a host of financial, legal and regulatory issues, that a tribal entity must investigate before making a decision to form a tribal telecommunications company.

I am pleased to share with the Commission the advice RUS gives to tribal entities interested in establishing a telecommunications company. Based upon our experience with rural telephony, we recommend three distinct areas that should be carefully considered: (1) the quality of the existing service; (2) the type of service to be provided; and (3) the availability of utility expertise, qualified management, and human and financial resources.

We urge tribal authorities to:

(1) Survey the Existing Service. In most cases, there will be some form of telecommunications service available on the reservation. Typically, service is limited to the more densely populated areas and the types of services available are limited. It will be necessary to negotiate with the existing telephone company to enter into a partnership or to purchase facilities if the tribal company's goal is to serve the reservation exclusively and provide improved service. The community must also determine whether subscribership rates are related to a lack of infrastructure or related to other issues such as ability to afford service or even local customs.

Under our statute, the **rural/urban** make up of a service territory is critical to RUS basic telecommunications program financing. RUS cannot generally finance local exchange service in towns with populations exceeding 5,000 unless such service is incidental to providing service in a surrounding rural area. However, the 5000-person threshold is relevant only at the time of the initial RUS loan. Therefore, RUS may be able to finance service extensions in larger communities served by existing borrowers. The population criteria for RUS distance learning and telemedicine financing is also broader.

Another important factor to consider is a town's effect on reservation subscriber growth. Areas adjacent to large cities or suburban environments may spur bedroom communities, additional subscriber growth, and business and industrial growth on the reservation, especially if utility infrastructure is adequate.

(2) Determine the types of services to be provided. The Tribal Authority must address the level of service they want to provide their consumers. This decision is influenced by existing service as well as what is technically and economically feasible.

Ideally, a telecommunications company should strive to serve everyone that wants service. However, the cost of construction on sparsely populated reservations will be high. It may not be feasible to serve every home on the reservation, no matter what the cost, with the same infrastructure. The tribe should formulate policy on such matters because these decisions will influence the cost of construction.

Consider growth factors and the local economy. Before an entity can forecast revenues and expenses with any accuracy, it must forecast subscriber growth. Are there industry and business opportunities on the reservation? What is the unemployment rate? Can and will consumers pay their telephone bills and at what rate?

The tribal authority must: **Consider service needs**. What level of service will people want? Are there demands for internet access, wideband data service, video and cable TV, ISDN, and XDSL data services? Are there potential applications for distance learning and telemedicine on the reservation that may require advanced telecommunications services?

(3) Determine the availability of utility expertise, qualified management, and human and financial resources. Without a doubt, these issues are the most important contributors to successfully organizing and starting a telecommunications company.

It is essential that the new company have management with telecommunications experience. In today's environment, almost every decision made can have far-reaching consequences on revenues and expenses. The Tribal Authority should seek experienced people outside the local area, if necessary. The Tribal Authority may also wish to consider a partnership with a private-sector telecommunications company. Two of the five RUS tribal borrowers did this. The tribe was, therefore, able to gain broad management experience and financial resources very quickly. This also provides an excellent training ground for tribal residents. Over time, local talent can be groomed to assume management duties and responsibilities. One of these two borrowers has since negotiated for the full ownership of the company by the Tribal Authority.

Independent operation is also critical. The telecommunications company should not utilize the financial resources of the tribe (except for startup equity and operating expenses discussed below) to operate nor should it be required to transfer its revenues to the tribal authority. Telecommunications service is extremely capital intensive and requires long-range planning. This cannot be successfully accomplished without assured revenue streams.

Start-up problems can not be underestimated. The initial 3 or 4 years of operations will be difficult. Large sums of money must be spent on telecommunications facilities before subscribers are connected and revenues begin to be realized. Unless waivers are approved, there will also be a 2-year delay in receiving Universal Service Fund revenues. The telecommunications company must have a source of operating funds for this period, either provided by the Tribal Authority or an outside lender. Most commercial lenders will require an infusion of equity, usually ranging from 10-25 percent.

Consider financing options. For rural telecommunications carriers, the most likely financing options are the Federal government (RUS) or the private sector lenders closely associated with RUS – the Rural Telephone Finance Corporation and CoBank. The Tribal Authority should consider the advantages and disadvantages associated with borrowing from each lender - interest rates, repayment terms, regulations - and select the one that best satisfies its needs.

Experienced Reliable Consultants are essential. It is virtually impossible to start a telecommunications company without some assistance from consultants: A consulting engineer to assist in system planning, design and construction supervision; a cost consultant for NECA, USF and tariff issues; and an attorney for loan and construction contract issues are typical of the experts whose services may be contracted to efficiently and effectively evaluate the possibility of establishing a new telecommunications company. The Tribal Authority should, however, be cautious on the amount of consulting work procured, as these costs can escalate quickly, especially if the authority decides not to pursue providing telecommunications services.

If a Tribal Authority is considering offering telecommunications services, RUS can assist by answering questions concerning system design, levels of service, and financial eligibility for loans. We can also provide references for the best source of information - those tribes that have already successfully established such systems.

RUS will finance the costs to prepare an application package for our loans. Private sector lenders may also finance the cost of the feasibility studies necessary to form the company.

RUS CAN HELP

The RUS Telecommunications Loan Program and the Distance Learning and Telemedicine Loan and Grant Program can both assist tribal authorities in expanding service from existing carriers or establishing independent telecommunications companies. While we cannot participate in forming the Tribal Utility Commissions, we can be an active participant in designing, financing, and constructing the telecommunications plant necessary to provide service on the reservation.

RUS is not just another financing institution. Our comprehensive programs are designed to not only provide the funding for rural construction, but to insure quality service at reasonable rates to the widest practicable number of residents. Because of RUS oversight, our loan funds are expended only for the purposes intended, while ensuring that the highest levels of quality service are available to tribal consumers. No other private sector lender offers this advantage.

RUS financing offers additional benefits:

Interest Rates – The RUS loan programs offer hardship financing at 5 percent, treasury rate financing at the government's cost-of-money, and guaranteed financing at the cost-of-money plus 1/8 percent. Private sector rates are typically 1 to 3 percent higher and are negotiable.

Loan Term – The term of an RUS loan is based upon the estimated useful service life of the plant facilities, typically 20 to 22 years. The maximum term for most private sector loans is

15 years.

Area Coverage – RUS ensures that, to the extent practicable, all consumers within an exchange receive the same level of service without substantial differences in rates. Private lenders have no guidelines on this.

Construction Oversight – RUS provides oversight to ensure that construction is properly performed. We maintain specifications and standards to ensure the highest quality facilities and service. Similar oversight is not provided by private lenders.

Standards – RUS maintains standards for construction materials, construction methods, plant design, and transmission quality. Private lenders do not prescribe such standards.

Vendor Assistance – RUS will intervene on behalf of our borrowers on vendor/contractor disputes and problems. Due to the size of our programs, we have established effective working relationships with outside manufacturers and vendors. Similar assistance is not provided by private lenders.

Technical Assistance - RUS can provide a broad range of technical assistance from the headquarters staff. We also have a field staff located throughout the country that can provide on-site assistance and oversight.

In the information age, the link between telecommunications and economic growth is obvious. Establishing a telecommunications entity is a very difficult task with no guarantee of success, however, when successful, the rewards can be several-fold: service usually improves, penetration rates increase, a wider range of services are offered, and with a sustainable universal service system, rates will be reasonable. The telecommunications entity will also be a source for jobs and training on the reservation and the improved infrastructure can promote additional economic development and growth.

It will, however, require the Tribal Authority to invest substantial monetary and human resources to get started, to fund feasibility studies, to participate in the decision-making process and to provide for an equity infusion.

The primary infrastructure necessary to establish a successful telecommunications company is a network of resources both human and financial that can be dedicated to the project. An effective, experienced management team and sufficient regulatory oversight by the Tribal Authority is necessary to ensure high-quality affordable service. Experienced management is critical since State Public Utilities Commissions does not regulate or provide oversight to utility services provided on Indian reservations.

Often the most efficient method of improving telecommunications service on reservations is to induce the Incumbent Local Exchange Carrier (ILEC) to provide better quality service on an area coverage basis. Since many reservations have very low penetration rates, the Tribal Authority must effectively negotiate with the ILEC to provide more comprehensive service. The Tribal Authority must be prepared to deal frankly with the reasons that have been given to justify less than adequate service:

Concerns over the exercise of tribal sovereign authority;

The difficulty incurred in obtaining right-of-way easements;

Higher than average construction costs;

Concern that high-cost subscribers may not pay their telephone bills on a timely basis.

Many of these fears can be allayed if the Tribal Authority becomes more active in establishing oversight on these issues and demonstrates a willingness to not encumber the ILEC's prudent business practices.

WIRELESS OPTIONS

Predominately Native American service areas present challenges for a wireline Local Exchange Carrier (LEC). Many of these areas have little or no telecommunications service now, and if there is service, it sometimes is not offered throughout the area because plant has not been extended into the rural parts of the service territory. A fairly high percentage of the residents have limited income, and many LECs who serve Native American areas charge Contributions In Aid To Construction (Aid to Construction) which acts as an impenetrable barrier to low-income households seeking service. Some Native American areas have rugged terrain, making construction of wireline plant expensive.

These circumstances suggest a different technological approach to serving Native American areas. Wireless local service is an evolving technology that should be considered. Wireless local loops can be built quickly so that low penetration rates could be remedied in a short time. The cost of a wireless local loop does not increase necessarily due to rugged terrain, although it does typically depend on line-of-sight wave propagation which limits its viability in mountainous areas. The LEC is less likely to apply crippling Aid to Construction charges to wireless because its cost per loop is constant for loop lengths within its unrepeatered propagation limit, which is typically around 30 miles.

The potential advantages of wireless local loops for Native American service areas can be summarized as follows:

· Quick insulation.

· Fixed investment within unrepeatered propagation limits.

· Little permanent investment at and en route to customer premises that can be stranded upon service termination.

While wireless solutions offer hope, they have their limitations and are not a pantecea. Wireless local loops have disadvantages also.

· Wireless local loop technologies use compression techniques and other design philosophies that limit modem transmission speeds. Current products assure modem transmission only up to 9.6 Kb/s. This is far below the current RUS standard for wireline capability of about 28.8 Kb/s. Extensive deployment of wireless local loops on Native Americans Reservations could create a society of "Information Have-Littles."

· Wireless local loops depend on house electrical power and cannot be network powered like wireline systems. In areas with low electric service penetration, like some Native American areas, wireless local loops cannot be used.

· While wireless local loops have fixed per loop costs, those costs are high. A close-in customer may cost the same as a far-out customer, but both cost at least $5000, compared to the average cost-per customer in RUS of $2833.

· When wireless local loop systems are deployed to serve fewer than their maximum capacity of customers, their cost per line goes up. For example, if a 196 line system is deployed to serve 25 rural customers, because of fixed costs the cost per line may exceed $12,000.

· Spectrum costs are unknown.

· Spectrum availability is unknown.

· If spectrum is made available and plant investments are made accordingly, there is uncertainty whether the spectrum would remain available throughout the useful economic life of the equipment.

· There is a shortage of products to provide wireless local loops. In the early 1980's when Basic Exchange Telephone Radio Service wireless local loop equipment was reasonably adequately supported by spectrum allocations, RUS had four suppliers on its List of Materials. When the BETRS co-primary spectrum allocation was changed to a secondary allocation basis, suppliers started dropping out of the market. Today, only one, wireless local loop manufacturer is on the List.

The Federal Communications Commission (FCC) could encourage the wireless local loop by allocating affordable spectrum to LECs, particularly those serving rural areas. It would not be helpful, however, if the FCC targeted such allocations only to Native American service areas, because such a limited market would not entice manufacturers to make affordable wireless local loop products.

Connection Charges

High connections charges often known as contributions to construction are one of the major impediments to phone service. In general, the RUS borrowers commit to area wide service and are not permitted to charge contributions to construction, In areas unserved by RUS borrowers, connection charges stand between being connected to the information age or not.

I am also pleased to announce today that the RUS and the Rural Housing Service have signed a policy memorandum which makes telephone and electric connection fees an eligible use for the Rural Housing Service's §504 loan and grant program. While competition for §504 home improvement funds is fierce, this eligibility can help give more Americans access to the information superhighway, especially as State and federal authorities review the appropriateness of contributions to construction. I have attached a copy of that memorandum to my testimony.

The E-RATE & DLT

While the E-Rate has been a boon for rural America, it's value in tribal communities is even more profound. By providing discounted services to schools, libraries and rural health care providers, the E-rate ensures that rural Americans in general, and Native Americans in particular are part of the new information age. Tribal communities will benefit substantially from the E-rate. Virtually all the BIA K-12 schools have applied for the E-rate and should qualify for the highest discounts.

The E-rate will give tribal communities modern access to the information superhighway at their local schools, libraries and health care providers. Students will gain access to the knowledge of the ages and tribal members will gain access to quality medical services via telecommunications technologies. Tribal communities can also use this access to share their culture, knowledge and ideas with the world. Where there are such serious shortages of telecommunications services at home, community access through schools, libraries and health care providers is critical.

The Rural Utilities Service has had a preview of the great advantages of bringing telecommunications, education and health care together. Since 1993, we have administered a distance learning and telemedicine (DLT) loan and grant program. Over 20 of our DLT projects have served Native American communities. I can tell you, that this technology saves and changes lives.

One lesson we have learned in this field is that high monthly costs are a significant impediment to sustainable distance learning and telemedicine projects. The E-rate will help solve that problem.

In this fiscal year, we will make $12.5 million available for DLT grants and $150 million available for DLT loans. This program compliments the E-rate. It provides financing and grants for end-user equipment and infrastructure investments. We have just proposed a streamlining of our program and a new emphasis on loan financing. The RUS can immediately process a loan request and a funds availability announcement for the grant and loan/grant portions of the program are expected in late mid-May.

Distance Learning and Telemedicine projects can also be a magnet for advanced infrastructure. With increased bandwidth in the community, new business opportunities can develop. Together, the E-rate and DLT will help improve tribal access to the information superhighway.

RUS Recommendations

There are no simple solutions to expanding service. But the FCC can take several steps to make service improvements to tribal areas easier.

(1) To reduce the barriers to providing modern telecommunications service to tribal nations, the FCC must expeditiously address the rulemakings that implement the Telecommunications Act but are vague on issues that relate to Tribal Authority and service on reservations. In most states, the Public Utilities Commission does not regulate service on Indian reservations and other state and Federal laws may not apply. In most instances in which FCC regulations

state, "...the State shall...", it is unclear how this language applies on reservations. Without the necessary clarifications, ILECs and private lenders are reluctant to make the investments necessary to provide modern, affordable telecommunications services.

(2) Right-of-way easements have been extremely difficult to obtain thereby resulting in delays and increased construction costs. Better coordination initiatives between the Bureau of Land Management, Bureau of Indian Affairs, U.S. Forest Service and RUS may be able to identify methods to alleviate these problems. Other issues influenced by these same agencies and others in the Government are environmental reviews and mitigation. Direct buried telecommunications plant is relatively benign to the environment; however, all too often, inordinate effort and expense must be expended to satisfy multiple state and federal the various Agency requirements.

(3) The carrier of last resort provisions of the Telecommunications Act of 1996 must be implemented in a way that works in tribal jurisdictions. Under the Telecommunications Act of 1996, no one who wants to purchase telecommunications service should be denied.

(4) The successful implementation of universal service support mechanisms for rural and non-rural LECs is vital to service in Native American communities. Universal service rules must not cap support particularly when rural exchanges are acquired and must provide predictable specific and sufficient support to a carrier providing new service to Native American customers.

(5) Lifeline support should be enhanced for tribal communities. Poverty is one of the greatest impediments to service in tribal communities. State matching requirements for lifeline assistance should be waived for tribal service. The RUS supports the recent lifeline waiver petitions Gila River and others.

(6) Spectrum in rural areas should be made available to provide workable broadband services in rural and remote communities.

(7) The Commission should experiment with solutions for communities with out service, such as allowing "in kind" universal service contributions, the value of which could be deducted from universal service assessments, buy downs of high cost infrastructure and support for connection charges.

The RUS is extremely proud of its Native American borrowers. They are achieving what many had thought impossible. The secret to their success is commitment and tribal support. They acknowledged and faced the difficult realities of providing high-cost service. They understand their customers.

In addition, the 60 RUS borrowers serving tribal communities have close relations with their tribal customers and are providing quality service at affordable rates.

Closing the gaps in service in Native American communities will take a concerted and coordinated effort. The Federal government has a unique responsibility in this area. RUS is proud of its efforts but is limited by the loan only nature of its basic telecommunications financial assistance programs. We welcome the opportunity to leverage our loan resources and technical expertise with other federal investments and universal service support. We also

encourage a broader approach to utilities development. Many of the phoneless Native American communities lack adequate electric, sewer and water services. Efficiencies can be achieved by a coordinated approach that bring together multiple federal, private, tribal and State resources.

I thank the Commission for the opportunity to participate in today's proceedings and congratulate you for your dedication and commitment to improving service to Native Americans. The RUS will assist the Commission in any way possible to help our first citizens succeed in the information age.

Thank you.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of
Fort Mojave Telecommunications, Inc.
Gila River Telecommunications, Inc.
San Carlos Apache Telecommunications, Inc.
Tohono O'odham Utiltity Authority, and
Any Similarly Situated Tribal Provider

CC Docket Nos. 96-45

Petition for Waiver of Section 54.403 (a)
of the Commission's Rules

Exparte Comments of the
Rural Utilities Service
in support of Tribal Provider's Petition for waiver

Background

The Rural Utilities Service (RUS, the Agency), a rural development agency of the United States Department of Agriculture, actively supports and promotes the universal availability of a broad range of telecommunications and information services in rural America through its Telecommunications Program. The Agency also administers programs to help finance fresh-water, wastewater, electric, distance learning, and telemedicine projects in rural areas. The RUS holds a $42 billion loan portfolio of investments in rural infrastructure.

The RUS and its predecessor agency, the Rural Electrification Administration, have been dedicated to improving the quality of life in rural America for over 63 years. The Telecommunications Program was begun in 1949 to extend and improve rural telephone service. To give an example of how rural America lagged, only 38.2% of American farms had telephone service at that time. The facilities that existed where overwhelmingly multi-party and were frequently the haphazard construction of the customers themselves, desperate for telephone service of any kind.

Today, dramatic progress has been made. However, the generally positive picture of rural telecommunications is clouded by persistently low service penetration rates among the rural poor and, in particular, in Native American communities. The RUS has had a long record of success in helping Native Americans bring quality water, electricity, and telecommunications to their homes and business. The Agency has worked with companies and cooperatives serving Native Americans since the earliest days of the Program. The RUS also has longstanding relationships with Native American owned and operated entities providing utility services (Tribal Providers). For example, the first telephone loan was made to the Cheyenne River Sioux Tribe in 1976. The purpose of this ex-parte comment is to endorse the efforts of Tribal Providers seeking a waiver of the State matching requirements of the Lifeline Program.

High Investment in Rural Areas

Providing modern affordable telecommunications services to all Americans is the central focus of the Telecommunications Act of 1996 (Act of 96). Low levels of service to Native Americans are inconsistent with the vision of this legislation. The Federal Communications Commission (Commission) should recognize that much of the problem is simply that of the high investment required in rural areas. This part of the problem cannot be solved without a *predictable and sufficient* universal support system as called for in the Act of 1996. These high cost are magnified in Native American communities that are often in isolated rural areas with harsh terrain.

Rate Support for Native Americans

The Lifeline Program is designed to ensure that all Americans have access to affordable telecommunications service. It must be recognized that poverty is a persistent problem among Native Americans and that the lack of affordable telecommunications and other utility infrastructure contributes to and makes it difficult to emerge from that poverty.

Those who are poor cannot afford to spend a large portion of a small income on telephone service. At a minimum, Section 54.403(a) of the Commission's rules that implement the Lifeline Program, should be waived in the case of these Tribal Providers to make the full range of Lifeline support available to a group of people clearly in need of that support.

This federal rule requires state commission action and state matching support before additional federal lifeline support can be made available to carriers. Because the Tribal Providers are not subject to a state commission, there is no state participation in low-income support. As a result, federal support is limited to the minimum amount ($3.50).

The Congress gave the Commission broad authority to implement universal service support, an example of which is that it delegated to the Commission the responsibility to designate Eligible Telecommunications Carriers on Native American Lands where states lack regulatory jurisdiction. The Federal government has a unique responsibility to Native American communities. As part of this responsibility, the Commission should waive the state matching requirement so as to ensure that Native Americans are eligible for the full benefit of the Lifeline Program. The RUS would also support additional efforts targeted toward increasing telecommunications availability and use in Native American communities.

Conclusion

The RUS believes that the Commission's Lifeline rule should be changed to prevent the unintended consequences of its current rules. The Commission should grant the waiver petitions of Fort Mojave Telecommunications, Inc., Gila River Telecommunications, Inc., San Carlos Apache Telecommunications, Inc., Tohono O'odham Utility Authority, and any similarly situated Tribal Provider.

Dated: April 2, 1999

CHRISTOPHER A. McLEAN
Deputy Administrator
Rural Utilities Service

Before the
Washington Utilities and Transportation Commission
1300 South Evergreen Park Drive S.W.
P.O. Box 47250
Olympia, Washington 98504-7250

In the Matter Of:	)	
	)	
Notice of Request for Comment on	)	
First Draft - Universal Service Rules	)	Docket No. UT-980311(r)
and Comments on Affordability	)	
	)	

Comments of the
Rural Utilities Service
with regard to
Voice Grade Bandwidth

Introduction

The Rural Utilities Service (RUS, formerly the Rural Electrification Administration) is a rural development agency of the U.S. Department of Agriculture that has promoted universal service in rural America for 48 years through targeted lending, technical support and policy guidelines. RUS telecommunications borrowers provide service to about 40 percent of the landmass of the country, roughly half of the rural portion of the continental United States. In the state of Washington, the RUS currently finances fourteen telecommunications providers who serve more than 48,000 subscribers on over 4500 miles of plant.

With 80 percent of the landmass, but only 20 percent of the population, rural America needs modern telecommunications as much as and perhaps more than urban areas. Telecommunications helps free the rural population from the limitations imposed by distance. In addition to ordinary voice communication, telecommunications can facilitate education, health care, and commerce for rural families and businesses.

The RUS bases its understanding of rural America's telecommunications needs on years of experience. Our benchmark is the quality of service provided in more densely populated areas. We have sought to ensure that RUS borrowers provide telecommunications service that is indistinguishable from that typically provided to urban and suburban customers and to provide that service at similar, affordable rates. Since this is much harder to do in low density areas, RUS has created its own practices and standards which address rural challenges. RUS stretches available funding resources by examining costs and system designs. RUS-financed systems are designed to be expandable and upgradable to meet rural America's needs economically throughout the anticipated economic life of the plant installed.

As with the RUS' previous filings with the Federal Communications Commission (FCC) on the subject of Universal Service, these comments are addressed to the needs of all of rural America, not just those portions served by RUS borrowers. Although RUS has a portfolio of approximately $5.2 billion in loans outstanding or guaranteed and a corresponding concern

about loan security, our primary concern is the health, education, and economic condition of all of rural America. As in the past, we remain technology neutral. We favor any method (fiber, copper, wireless, etc.) that will economically establish and maintain quality universal service.

Voice Grade Bandwidth

The RUS supports the Washington Utilities and Transportation Commission's (Commission) focus on high quality voice grade bandwidth as demonstrated by the proposed requirement that new and upgraded lines be capable of handling frequencies up to 3500 Hz (definition of supported services, WAC 480-123-200). As the Commission is aware, the RUS filed ex-parte comments with the FCC on January 30, 1998, in response to its decision to reduce the definition of voice grade bandwidth from 500-4000 Hz to 300-3000 Hz. The arguments made to the FCC are equally relevant to the Commission as it proceeds to set a definition of voice grade bandwidth. The following excerpts are from that filing:

> Each circuit element in a local loop can limit bandwidth, and those effects will compound if the limits are close together. Loops comprise central office switches, physical wires (usually copper) which connect customers to those switches, and other electronic systems which are used to minimize or replace copper wires. All loops use a switch, so all are subject to the bandwidth limitations of the switch. Currently, digital switches limit the top frequency of a loop to somewhere between 3400 and 3500 Hz. This limit is a design decision made by the switch manufacturer, and it could change - the theoretical top frequency of devices using the current standard sampling rate is 4000 Hz. Most other electronic systems are based on the same sampling technology, so they offer the same upper frequency limits as digital switches.
>
> The equality between urban and rural loops ends there. Rural loops are bandwidth limited by their copper wires. High frequency performance of copper loops declines as the loops get longer. Urban and suburban loops have short wires (most are under 18,000 feet) which will pass fairly high frequencies. For example, a 6,000 foot copper wire pair will support T1 carrier, the spectral density of which is centered at 750 kilohertz. Urban loops rarely limit voice bandwidth....
>
> The economic life of a digital switch is estimated by RUS to be under 12 years, and the economic life of copper cable is over 20 years. The reduction in required bandwidth, which will affect primarily rural copper plant, could be a permanent barrier between rural subscribers and the important (and economically available) frequencies above 3000 Hz.
>
> - **The effect of this reduction will be to slow down rural America's access to information technology.**
>
> The higher frequencies in the voice band are critical to any users' access to information services via computer modems. Modern popularly-priced home computers are equipped with modems with a capability of data transmission at a rate of 28.8 kilobits per second (Kbps). Modems test the telecommunications

circuit they are operating over and select a data transmission scheme and rate for maximum speed without error. They test for the top frequency the circuit will transmit, and they test other performance factors. A circuit that is limited to only 3000 Hz will cause the modem to operate at a significantly lower speed than one that will pass higher frequencies, if other factors test about the same.

A 3400 Hz circuit will not guarantee that a modem will connect at 28.8 Kbps, but 3000 Hz circuit will practically guarantee that it will not. A wider voice band makes a modem more tolerant of other circuit performance flaws that are more common on rural loops, such as phase shift. Restricted bandwidth is not the only impediment to modem performance, but it is the most permanent....

- **A higher bandwidth would be more consistent with the Universal Service Principles in Section 254(b)(3) and 254(c)(1) of the Act.**

The RUS believes that the Act is intended to provide rural Americans with access to telecommunications and information services comparable to the access that urban and suburban customers enjoy. The reduced bandwidth requirement for voice grade access, which is now at a level below that which is available to urban and suburban customers, will hurt rural customers.

- **Carriers who have some loops that can't meet a higher bandpass requirement can be accommodated.**

A requirement for voice grade access higher than 3000 Hz would not have to deny universal service support to carriers who cannot yet meet it because the requirement could be phased in.

The Commission defined universal service as one-party service despite the fact that there are many four-party lines in rural areas today. The RUS believes that this was the right decision. The May 8 Order requires one-party service but provides for a phase-in to prevent carriers from losing support until they can reasonably eliminate lower grades of service.

Rural bandwidth comparable to urban bandwidth could be phased in the same way....

Conclusion

The RUS appreciates the opportunity to offer comments to the Washington Utilities and Transportation Commission as it implements statewide universal service rules. We support the Commission's focus on a definition of voice grade bandwidth that will help ensure that rural service is comparable to that found in urban and suburban areas.

CHRISTOPHER A. McLEAN
Deputy Administrator
Rural Utilities Service

Before the

Federal Communications Commission

Washington, D.C. 20554

FCC 96-93
CC Docket No. 96-45

In the Matter Of
Federal-State Joint Board on
Universal Service

Ex Parte Presentation of the

Rural Utilities Service

The Rural Utilities Service (RUS) hereby reports *ex parte* representations to members of the Federal Communications Commission (Commission) staff on January 27, 1998, at Commission offices at 2100 M Street. The meeting was on the subject of voice grade access (CC Docket No. 96-45), and was attended by the following:

Attendee	Representing
Lisa Boehley	Federal Communications Commission
Bob Loube	Federal Communications Commission
Diane Law	Federal Communications Commission
Abdel Eqab	Federal Communications Commission
Bill Howden	Federal Communications Commission
Whitey Thayer	Federal Communications Commission
Sonja Rifken	Federal Communications Commission
Stagg Newman	Federal Communications Commission
Fred Lee	National Telecommunications Information Agency
Christopher A. McLean	Rural Utilities Service
Elizabeth Jones	Rural Utilities Service
Ed Cameron	Rural Utilities Service

Introduction

The RUS (formerly the Rural Electrification Administration) is a rural development agency of the U.S. Department of Agriculture that has promoted universal service in rural America for 48 years through targeted lending, technical support and policy guidelines. RUS telecommunications borrowers provide service to 40 percent of the landmass of the country, which is roughly half of the rural portions of the continental United States. Comprising 80 percent of the landmass, but only 20 percent of the population, rural America needs modern telecommunications to bring high quality education, health care, and commerce to rural families and businesses. Telecommunications frees the rural population from limitations of time and space.

RUS is in a unique position to comment on rural America's telecommunications needs. The Agency's goal has always been to provide every rural household with affordable service. Our point of reference is the urban and suburban subscriber. We have sought to ensure that RUS borrowers provide telecommunications service that works like, sounds like, and costs like the urban and suburban customers' service. Since this is much harder to do in low density areas, RUS has created its own practices and standards which addressed the rural challenges. RUS stretches available funding resources by examining costs and system designs. RUS-financed systems are designed to be expandable and upgradable to meet rural America's needs economically throughout the anticipated economic life of the plant installed.

As with the RUS' previous filings on this docket, this presentation addresses all of rural America, not just those portions served by RUS borrowers. Although RUS has an outstanding portfolio of approximately $5.2 billion in loans outstanding or guaranteed, and RUS does have a concern about loan security, the overriding issue is the health, education, and economic condition of all of rural America. And as in the past, we are technology neutral and favor any technology that will economically establish and maintain universal service, be it wireline, wireless, or satellite.

The purpose of this presentation is to summarize what was said in the January 27, 1998, meeting.

The January 27, 1998 Meeting

- **The Commission set the definition of voice grade access for universal service support through an open and exhaustive rulemaking process. In its reconsideration, adopted December 30, 1997, the Commission significantly reduced the bandwidth component of that definition on its own motion.**

The RUS pointed out that as part of the Telecommunications Act of 1996 (Act), a Federal State Joint Board (Joint Board) was established to provide guidance to the Commission as it prepared regulations to implement the Act's Universal Service Provisions (Section 254). The Joint Board recommended that voice grade service be defined as having a frequency range (bandwidth) of 500 to 4000 hertz. This definition was recommended after extensive public input was obtained in hearings and written comments, including comments filed by the RUS. The Commission adopted the Joint Board's recommendation concerning voice grade bandwidth in its *Universal Service Report and Order* dated May 8, 1997 (May 8 Order), after having received further comment including extensive comment on the Joint Board's recommendations.

In the Fourth Order on Reconsideration, issued December 30, 1997 (Fourth Order), the Commission significantly changed the definition of voice grade bandwidth without seeking comment. The new definition of voice grade access is 300 to 3000 Hz.

- **This reduction will be felt almost exclusively in rural America.**

Short urban and suburban loops inherently have a wide voice bandwidth. Most urban and suburban loops do not require loop treatment which restricts bandwidth. Most rural loops do have loop treatment. (Loops over 18,000 feet require treatment.)

Each circuit element in a local loop can limit bandwidth, and those effects will compound if the limits are close together. Loops comprise central office switches, physical wires (usually copper) which connect

customers to those switches, and other electronic systems which are used to minimize or replace copper wires. All loops use a switch, so all are subject to the bandwidth limitations of the switch. Currently, digital switches limit the top frequency of a loop to somewhere between 3400 and 3500 Hz. This limit is a design decision made by the switch manufacturer, and it could change - the theoretical top frequency of devices using the current standard sampling rate is 4000 Hz. Most other electronic systems are based on the same sampling technology, so they offer the same upper frequency limits as digital switches.

The equality between urban and rural loops ends there. Rural loops are bandwidth limited by their copper wires. High frequency performance of copper loops declines as the loops get longer. Urban and suburban loops have short wires (most are under 18,000 feet) which will pass fairly high frequencies. For example, a 6,000 foot copper wire pair will support T1 carrier, the spectral density of which is centered at 750 kilohertz. Urban loops rarely limit voice bandwidth. Longer loops which serve rural subscribers (most are well over 18,000 feet) require loading with inductors which limits higher frequencies and also introduces phase shift across the voice band. Rural loops can be economically designed to pass frequencies higher than the current digital switch cutoff, or they can be designed to provide lower cutoffs such as the 3000 Hz specified by the Commission in the Fourth Order.

The economic life of a digital switch is estimated by RUS to be under 12 years, and the economic life of copper cable is over 20 years. The reduction in required bandwidth, which will affect primarily rural copper plant, could be a permanent barrier between rural subscribers and the important (and economically available) frequencies above 3000 Hz.

- **The effect of this reduction will be to slow down rural America's access to information technology.**

The higher frequencies in the voice band are critical to any users' access to information services via computer modems. Modern popularly-priced home computers are equipped with modems with a capability of data transmission at a rate of 28.8 kilobits per second (Kbps). Modems test the telecommunications circuit they are operating over and select a data transmission scheme and rate for maximum speed without error. They test for the top frequency the circuit will transmit, and they test other performance factors. A circuit that is limited to only 3000 Hz will cause the modem to operate at a significantly lower speed than one that will pass higher frequencies, if other factors test about the same.

A 3400 Hz circuit will not guarantee that a modem will connect at 28.8 Kbps, but 3000 Hz circuit will practically guarantee that a it will not. A wider voice band makes a modem more tolerant of other circuit performance flaws that are more common on rural loops, such as phase shift. Restricted bandwidth is not the only impediment to modem performance, but it is the most permanent.

The Commission staff stated that it realized, after issuing the May 8 Order, that few telecommunications circuits in the nation could pass 4000 Hz. The RUS agreed with this, but argued that the Commission has gone too far in reducing the top end of the voice band to 3000 Hz.

- **A higher bandwidth would be more consistent with the Universal Service Principles in Section 254(b)(3) and 254(c)(1) of the Act.**

The RUS believes that the Act is intended to provide rural Americans with access to telecommunications and information services comparable to the access that urban and suburban customers enjoy. The reduced bandwidth requirement for voice grade access, which is now at a level below that which is available to urban and suburban customers, will hurt rural customers.

- **Carriers who have some loops that can't meet a higher bandpass requirement can be accommodated.**

A requirement for voice grade access higher than 3000 Hz would not have to deny universal service support to carriers who cannot yet meet it because the requirement could be phased in.

The Commission defined universal service as one-party service despite the fact that there are many four-party lines in rural areas today. The RUS believes that this was the right decision. The May 8 Order requires one-party service but provides for a phase-in to prevent carriers from losing support until they can reasonably eliminate lower grades of service.

Rural bandwidth comparable to urban bandwidth could be phased in the same way.

Until the Fourth Order, it was clear that the objective of the Commission in defining the supported services was not to find the lowest common denominator of services offered around the Nation. Universal service should be defined in a manner that is fully consistent with the Act.

- **The new bandwidth is based on a definition of voice grade access that is obsolete and possibly irrelevant to this proceeding.**

In the Fourth Order, the Commission states it chose to reduce bandwidth for voice grade access because that is the way voice grade access is defined by the American National Standards Institute (ANSI). This not a new ANSI definition. It was in effect when the Commission issued the May 8 Order, it was in effect while the Joint Board deliberated, and RUS believes it has been in effect for over 40 years. The RUS has documents from the 1950's that state the same 300 to 3000 Hz bandwidth for telephone service. These documents were based on the national standards of the day. Of the several bandwidths to which the Commission makes reference in the Fourth Order, the Commission chose the oldest and most restrictive.

The core service definition of voice grade access for universal service support purposes should not be written by a national standards setting organization. Congress provided the guidelines for defining the supported services in Section 254(c) of the Act. Standards setting organizations do not necessarily have to follow such guidelines - they are more likely to search for consensus among service providers and therefore may engage in a lowest common denominator search. Public policy decisions such as the definition of supportable services should be made only after the public has an opportunity to be heard. Standards setters do not conduct standards setting in a manner that encourages comment from the general public. For example, parties with an interest in this issue, such as rural educators and rural small businesses, do not have access to the national standards setting process.

Conclusion

The reduction in the definition of voice grade bandwidth will not provide comparable service in rural areas as required by the Universal Service Principles, will be felt almost exclusively in rural America, and will hamper rural customers as they try to use the Internet and other information services. The few hundred Hertz above 3000 are crucial to rural Americans and to fulfilling the Act's goal that rural service be comparable to that in urban areas. Without these few Hertz, rural schoolchildren will be waiting for information to be delivered to their computers while their urban cousins have moved on to the next question.

The RUS recommends that the Commission reconsider this reduction in the quality of voice grade bandwidth.

CHRISTOPHER A. McLEAN
Deputy Administrator
Rural Utilities Service

cc: All attendees